52.04

TEXAS Highways

February, 1954

DO YOU KNOW TEXAS?

This historic old frame building was once an important stagecoach stopover on the tiresome journey from Nacogdoches to San Augustine. Today, the 35-mile trip over State Highway 21 takes less than half an hour. When this building was in use as an inn, travelers spent more than ten hours in the lumbering, clumsy stagecoaches to make this journey. It is easy to imagine what a welcome sight this gracious inn was to travelers.

Known as Midway Inn, it is located one mile west of Chireno, between Nacogdoches and San Augustine. Built by slave labor before the Civil War, one of the main attractions of the place today is the two huge fireplaces at each end of the house.

This inn was a favorite stopping place for coaches using the Old San Antonio Road. Today State Highway 21 follows this old road closely. The oldest road in Texas, it was sometimes called the "Kings Highway," or "El Camino Real." Originally, the road entered Texas from Mexico at Guerrero near Eagle Pass and ended at Natchitoches in Louisiana. Later, it became known generally as the Old San Antonio Road.

About the Cover . . .

The cover this month is an aerial photograph of the unusual interchange on U.S. 75 and Loop 12 in Dallas. This is a "7/8" clover-leaf, with the northeast quadrant not a full clover-leaf design.

NOTE: *"Texas Highways" expresses its appreciation to Frank Cawthon, District Engineer of District 18, for submitting this cover picture. Pictures of interesting or unusual structures, construction projects, or in general any subjects which might be suitable for a cover picture should be submitted and will be most welcomed by "Texas Highways."*

VOL. I

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TEXAS Highways

The purpose of this publication, "Texas Highways," is to furnish a medium for presenting practical ideas and information. Employees are invited and urged to submit suggestions and relate experiences which would benefit or be of interest to Highway employees. These conclusions and data are not necessarily endorsed by the Highway Department nor are they to be construed as instructions.

Photographic services are available and other assistance may be obtained, if desired, in preparing material for submission. All material and comments should be directed to the Information and Statistics Division, Austin 14, Texas.

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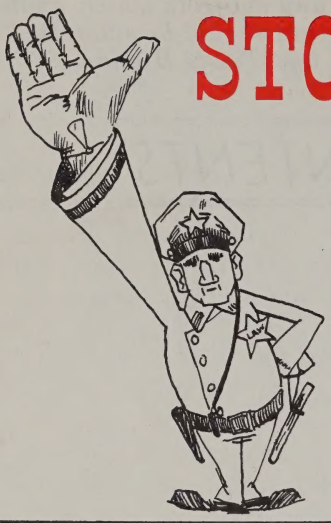
COMPILED AND EDITED
Information and Statistics Division



STOP!

It's The Law

The state registration law, R.C.S. 6675a-2, requires Texas motorists to register their vehicles in the county in which they reside. Motorists who do not comply with this statute and register their vehicle other than in their home county are subject to a fine of not more than $200 and are forced to reregister their vehicle.

Residents moving from a state with which Texas does not have a reciprocity agreement, have 30 days in which to register their vehicle after establishing residence.

Emergency Repairs on U.S. 90 Bridge over Sabine River

C.H. Brown, District Construction Engineer
District 20

On May 23, 1953, one of the highest flood crests ever recorded on the Sabine River passed the old bridge on U.S. 90 at Orange. Although water had inundated the highway on the Louisiana side of the river, traffic never completely stopped moving. Normal traffic of 5,850 vehicles per day was resumed in a few days.

This turn span bridge was built in 1928 and is scheduled to be dismantled early in 1954. The new bridge is already built and will be placed in service as soon as the current contract on the approaches is completed.

After the flood subsided, Resident Engineer Ken Nagai sounded the stream channel to determine the extent of the erosion caused by the swift current which had occurred during the period of high water. Mr. Nagai's soundings revealed that the stream bed had lowered 30 feet since the last time it was measured and a large hole had scoured out near the pivot pier. This caused immediate concern as to the safety of this bridge, but a check of the plans showed that piling supporting the pier still penetrated the river bed a minimum depth of approximately twenty feet.

Mr. Nagai had requested construction data on this bridge in order to prepare plans for its removal. When this information was received, he found that pile lengths had been reduced from those shown on the original plans because of the hard driving encountered during construction. A check against the recently measured profile of the stream bed showed that, actually, the piling under the east rest pier only penetrated the ground to a depth of from three to six feet. Mr. Nagai called this information to the District Office on the morning of July 6.

District Engineer W. E. Simmons called the Austin Office and acquainted them with this situation and, as P. V. Pennybacker, Supervising Bridge Engineer of D-5, was in Houston, it was arranged for him to meet Mr. Nagai and District Construction Engineer C. H. Brown at Orange. On Mr. Pennybacker's recommendation, it was decided to construct a fifteen foot high cofferdam around the rest pier and fill inside it with concrete. The cofferdam was to be constructed of sandbags filled with a mixture of sand and cement and all of this was to be placed in water which is 50-feet deep at this point. Also, approximately 1,000 cement stabilized sandbags would be placed at the pivot pier to reinforce it and these would have to be placed in water 70-feet deep.

A derrick barge, a work barge, and a tug were rented from Frank Rougeot, contractor at Orange, and work began immediately with state forces under the supervision of Maintenance Foreman L. M. Bilbo.

Originally, it was thought that the sandbags would have to be placed with a clam bucket in order to get them in their proper position through 50 feet of water but, after dropping several with strings attached to observe their

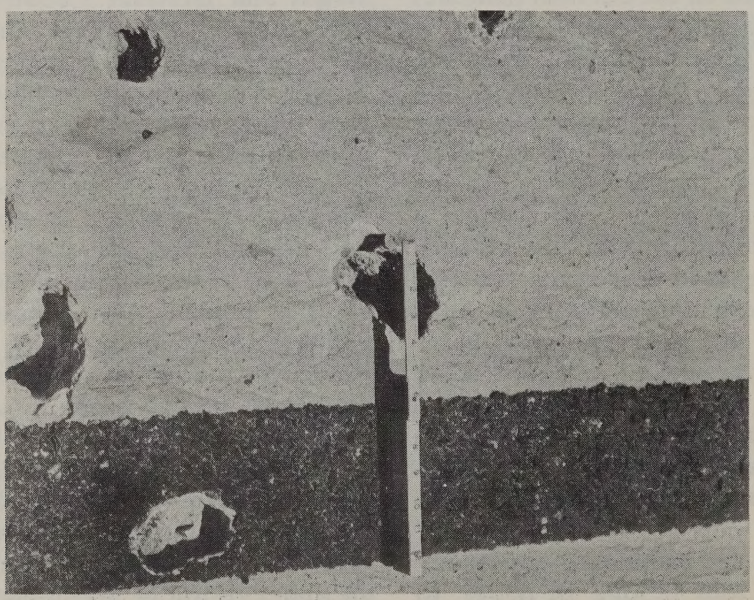
location, we found that they could be placed satisfactorily by dropping them over the side of the barge. Approximately 6,000 sandbags were placed around the east rest pier and about 1,000 were placed at the pivot pier.

Placing of sandbags was completed on July 16, and on July 17, 50 cubic yards of Class "E" seal concrete were placed around the piling of the east rest pier. This concrete was placed through two ten-inch tremie pipes. The concrete was mixed in three-cubic-yard transit mixers and delivered into a concrete bucket on the bridge floor from where it was handled by the derrick barge into the tremie pipes.

On July 24, a diver went down to inspect the completed work and reported the job was good and the sandbags had interlocked as they were placed and then hardened in this position so that he had been unable to move them. The sandbag cofferdam had contained the Class "E" concrete and we now apparently have a concrete foundation around the piling of about twelve feet thickness.

This strengthening of the foundation of this bridge should allow it to continue in service for the length of time it is needed. This method of repair could be used satisfactorily for other bridges in the highway system that are in danger of undermining.

HOLES IN PAVEMENT



These holes in the concrete surface were caused by large clay balls in the concrete aggregate. Don't let this happen on your work.

They Left the Handle Off

Olof Philippi, Assistant Construction Engineer
Construction Division

Extractors employing centrifugal force are not new, as anyone raised on the farm and familiar with cream separators can tell you. Before 1935, however, the largest commercially built asphalt extractor contained a 1000-gram capacity bowl and it still does. These small capacity machines are not suited to our paving mixtures containing aggregate particles larger than 1/2 inch.

The Texas Highway Department had an experienced manufacturer build a large hand-driven extractor in 1935. This particular piece of equipment, when placed in motion, produced a terrific amount of vibration, so much so that it had to be mounted outside the plant laboratory on a block of concrete about one cubic yard in size and weighing some 4,000 pounds. The vibration even shook this block of concrete and we dubbed this machine "Big Bertha." This vibration is probably the reason why larger machines had not been built in the past. When testing the large aggregate mixtures, it is very difficult to load the bowl uniformly and it is this uneven loading at high speeds that does the damage. However, we learned a lot from Big Bertha and our present large hand-driven extractors that came out in about 1938 were a result of this experience.

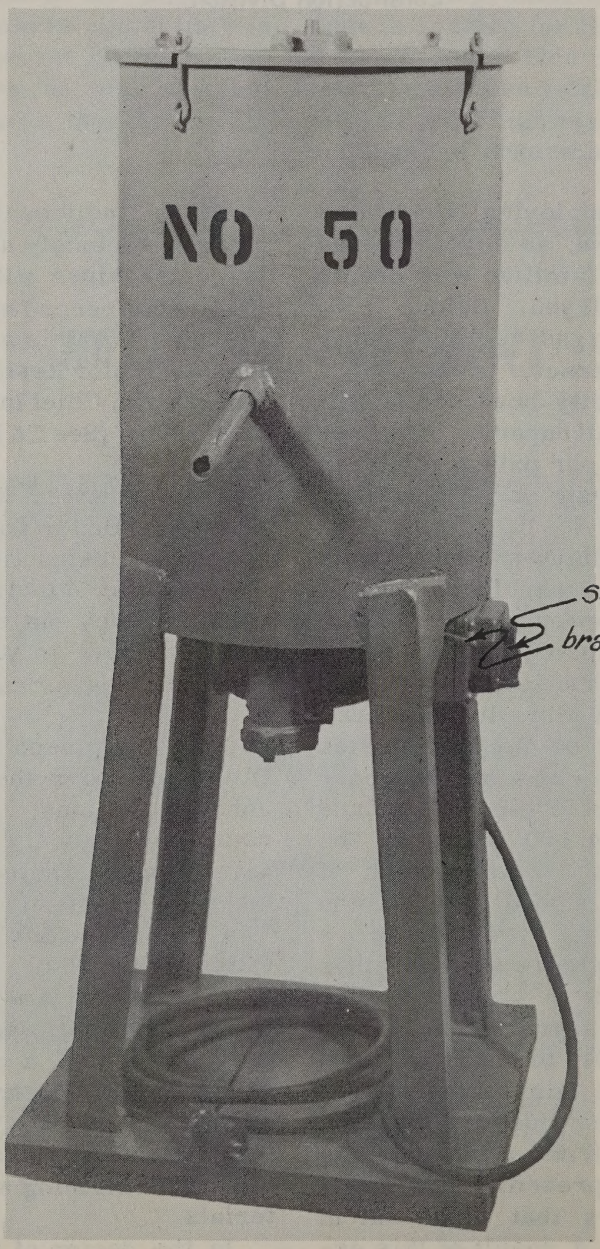
Many individuals have probably thought seriously about driving these large machines with electricity, but the first on record with the Department to accomplish this was the late Cooper Dewey, Senior Resident Engineer, and C.R. Doyle, Chief Inspector in District 12 in 1950. (See C&M Bulletin 7, July, 1951.)

Early this year it became apparent that we needed more large extractors for our construction projects and, feeling that electricity was not a passing fancy but a means of power that was here to stay, we decided to make the new extractors electrically driven.

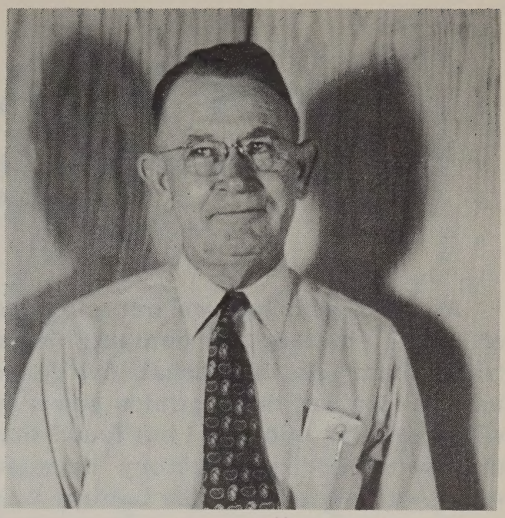
The Equipment and Procurement Division, under the able direction of John B. Nations, was requested to construct a goodly number of these extractors in their shops. Working under the general direction of R. W. Townsley, Shop Superintendent, A. M. Quist, Supervisor, assisted by G. M. Brown, Supervisor, and Thomas W. Cox, Machinist, were consulted on the design and applied their many skills in the construction of the new extractors. C. J. Collin, Warehouse Superintendent, extended his many talents in obtaining all of the raw materials.

In the design of the new extractor economy dictated that we reduce

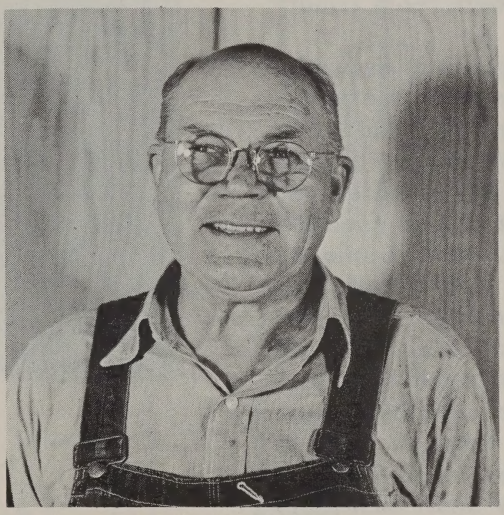
weight, electric weld wherever possible and eliminate all unnecessary machine shop frills. The result may be seen in the photograph. Note the bench-top height of the extractor. These machines are powered with 110 volt alternating current, one-fourth horsepower explosion-proof motors. All bearings, including the motor are sealed and no greasing of the extractor is necessary. To the men named above goes the credit for our new electric extractors. If you are interested in good shop work, you will see many neat tricks applied here. But best of all to the inspector who uses this new Bertha, THEY LEFT THE HANDLE OFF.



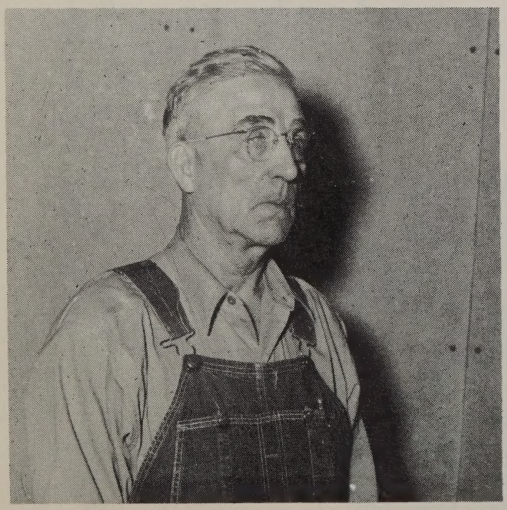
R.W. Townsley



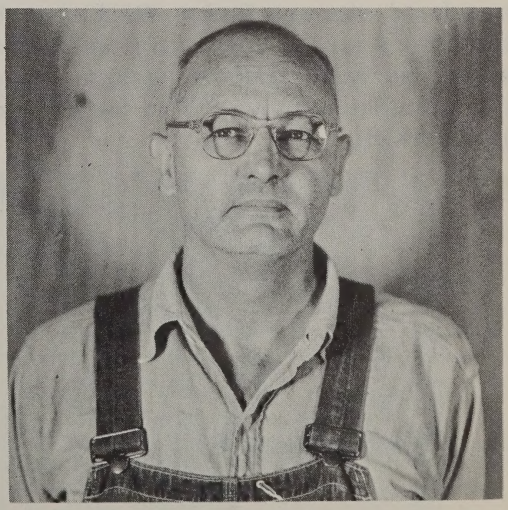
C.J. Collin



A.M. Quist



Guy M. Brown

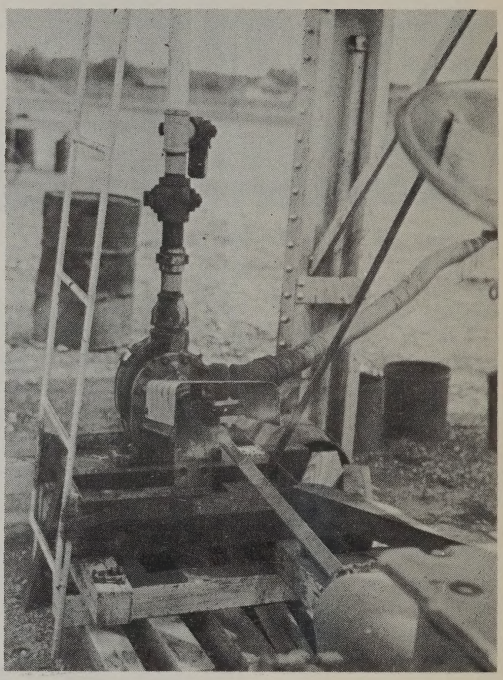


Thomas W. Cox

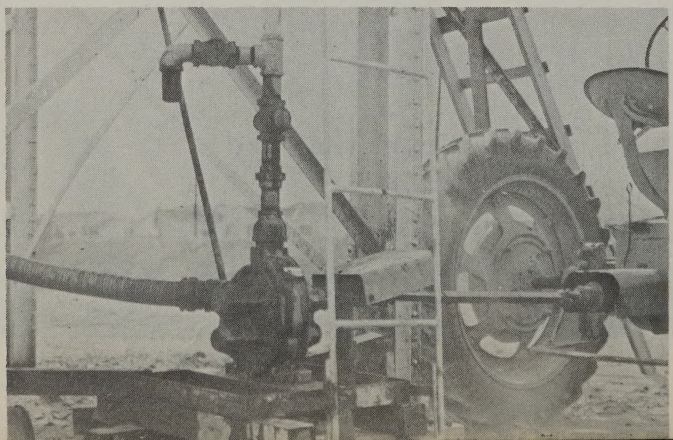
Power for Asphalt Pumps

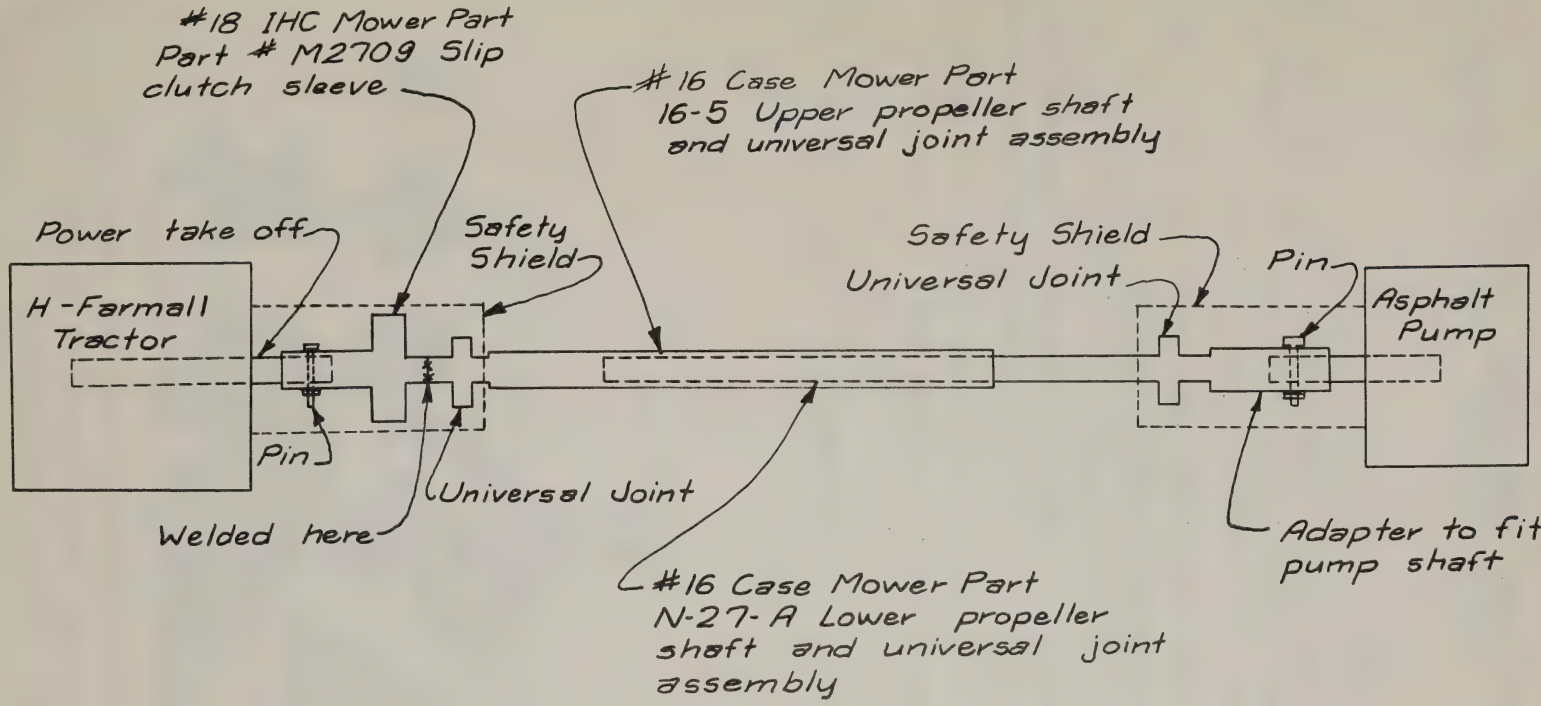
Bill Seabourn, Equipment Supervisor
District 8

About a year ago we were in need of some method of pumping from transport trucks the asphalt delivered to us. We had three pumps powered with gasoline motors, but found that they were not satisfactory because when we needed one the battery was dead or the valves stuck. The pumps were not used often enough, and it cost too much to move them from county to county.



We looked through our salvaged parts and found that we had some power take-off attachments for Model H Farmall tractors. We had a Farmall H tractor in most of our counties, so we put the attachment on and used the upper propeller shaft end and universal joint and lower drive shaft and universal joint assembly of a No. 16 Case Mower, Parts No. 16-5 and N-27-A, and welded a M-2709 slip clutch sleeve off a No. 18 IHC mower which fits our power take-off shaft to the part No. 16-5 upper propeller shaft and adapted the lower shaft assembly U joint, Part No. N-27-A to a three inch Roper pump that we have at each overhead storage tank. We find that this saves us the cost of a power unit and repair and transporting them from one county to another. And they work just as well.





Assembly Used to Transmit Power
from Tractor to Asphalt Pump

Designed by Bill
Seabourn & Ray Vaughan
District 8

DO YOU KNOW...

The Long and Short of It

Listed below are five questions on the highest, lowest, shortest, and longest points in the Texas highway system. Quiz yourself on these points to see how much you know about this phase of the state with the "biggest and mostest" of everything. Turn to page 15 for the answers.

1. Do you know the highest spot in our state where a highway is located?
2. Where is the lowest point on a state highway?
3. What and where is the highest bridge in the state system?
4. Which is the longest state highway?
5. What is the number and location of the shortest state highway in Texas?
6. Can you name the highway carrying the largest daily volume of traffic in the state in rural areas?
7. Do you know the highway carrying the least daily volume of traffic?
8. What is the longest U. S. highway in the state?
9. What is the shortest U. S. route in Texas?

● ● ●

"Folks, I'm new on this route and we're at the south end traffic circle. There'll be a ten-minute rest period while I study the signs."

NECHES RIVER BRIDGE REPAIRS

Hardin-Jasper County Line, U.S. 96

C.H. Brown, District Construction Engineer
District 20.

The wind bracing on the truss of the Neches River Bridge on U.S. 96 near Evadale was struck by an overheight load at 5 p.m., September 14, 1953, causing severe damage to panels 2, 3, and 4, and some damage to the entrance portal. This truss is a 175-foot pin connected, through, steel type, with timber floor. (See accompanying sketch and photographs.)

Panel 4 sustained the most damage with two eight-inch channels broken in the downstream column and one eight-inch channel cracked in the upstream column. The downstream column was pulled inward 24 inches and the upstream column was pulled in about 20 inches.

Panel 3 had one eight-inch channel cracked in the downstream column and this column was pulled inward sixteen inches while the upstream column was bent inward fourteen inches.

Panel 2 had an eight-inch channel cracked in the downstream column and it was bent inward fourteen inches. The upstream column was bent inward ten inches.

The wind bracing on the portal and these interior panels was bent to the extent that removal and replacement was necessary.

After the extent of the damage was determined, all heavy loads were detoured by way of State Highways 62 and 235 to Beaumont, and only passenger cars were allowed to use the span.

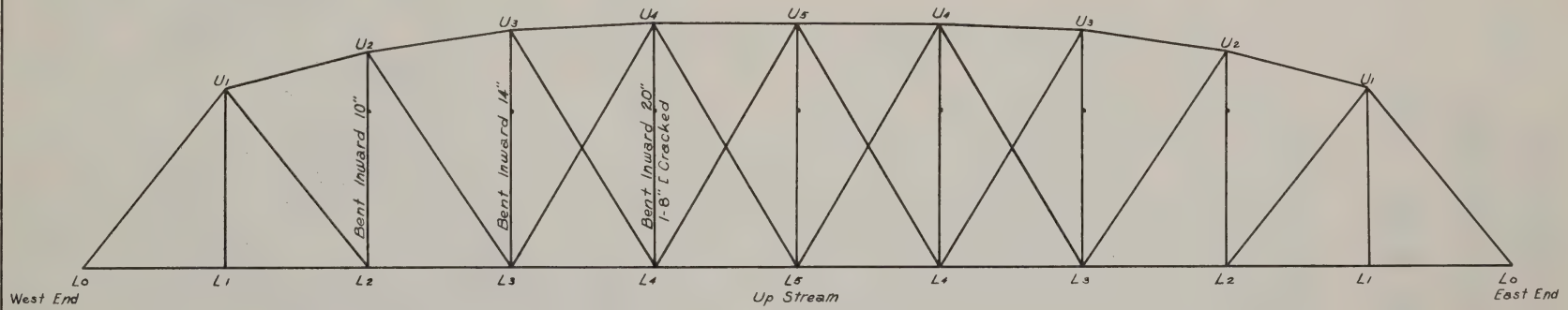
O.A. Keith, Senior Equipment Supervisor, immediately began to assemble materials and equipment necessary to repair the damage.

The Maintenance Division was informed of the damage by telephone and since A.J. Sherrod, Senior Maintenance Bridge Engineer, was in Houston he came over to survey the damage and to outline work necessary to repair the span.

Keith had a temporary column placed adjacent to the most severely damaged column in panel 4 in order to prevent total collapse of the span and also to allow the damaged portion of this column to be cut out and replaced. It was necessary to use jacks and a line from a winch truck to bring the top and bottom chords of the truss in line before the temporary column could be tied in. A twelve-foot section of this damaged column was removed and replaced.

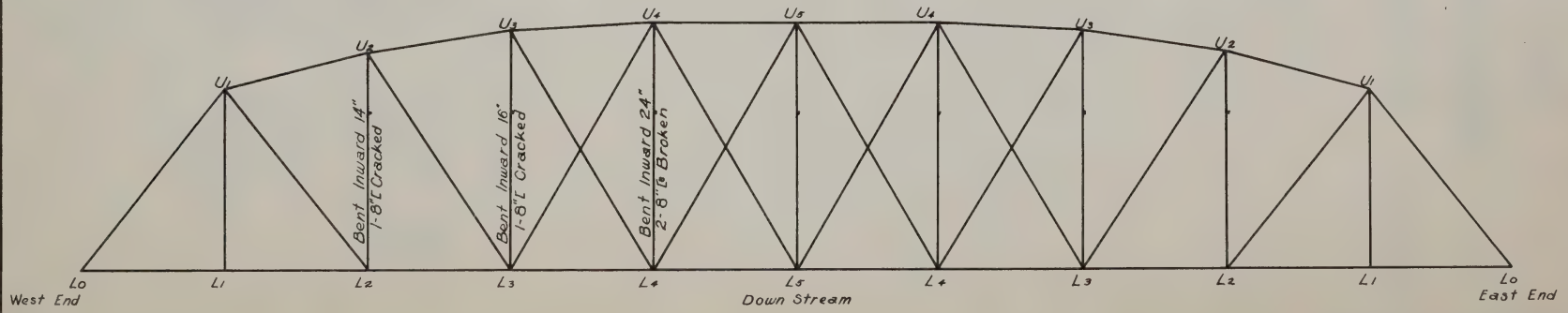
After work was completed on the downstream column of panel 4, the other columns were pulled and jacked back to their original positions. It was necessary to cut the wind bracing loose in order to get these columns straightened. A jack was placed at a 45 degree angle with the deck, from the deck to the bent columns, and pressure applied. The outside of the bent columns was heated after load was applied and the columns were straightened in a transverse direction. By placing a winch line from the truck

Line Diagram of Neches River Bridge on U.S. 96 at Evadale Showing Damage To Structure



175'-0" Pin Connected Through Type Steel Truss

The lower chords of wind bracings at panels 2, 3, and 4 were hit solidly and severely damaged.
The wind bracing in panel 5 was struck and slightly damaged.



County	Control	Section	Hwy. No.
Jasper	65	4	U.S. 96

Looking east along upstream side of bridge showing bent column and wind bracing damaged by over-height load September 14, 1953.

Looking east along downstream side of bridge showing columns bent on both sides and damaged wind bracing.

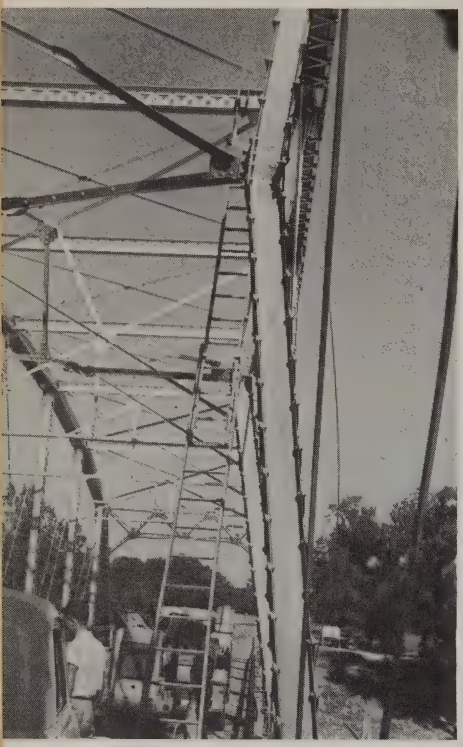
to the column and back to the top chord, the columns were pulled back to position in the line of the truss. One-way traffic was carried across the span during the jacking operation. The wind bracing was raised approximately 24 inches when it was replaced to provide more clearance through the span. After the columns were straightened, they were reinforced by welding in plates where necessary.

The wind bracing in the portal was also raised when it was repaired. Since half of the wind bracing was damaged and raised during repairs, it was decided to raise the remainder of the bracing to provide additional clear height for the travelway.

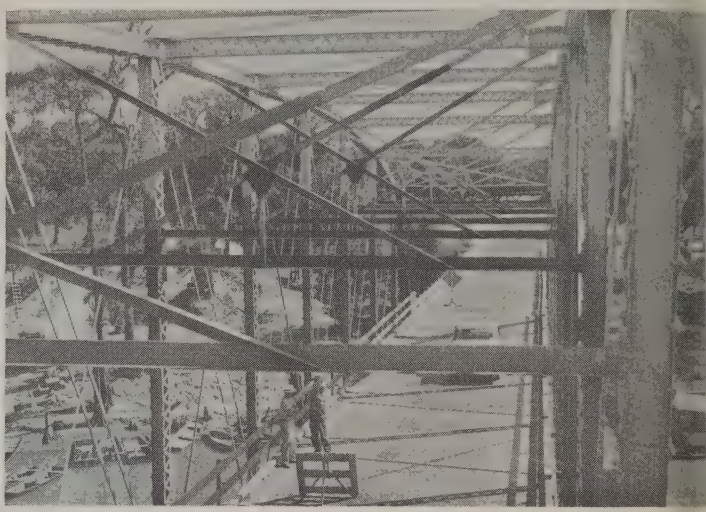
The diagonals in the damaged portion were all slack and it was necessary to heat shrink them to get them functioning properly.

All repairs to this span were completed on September 21, 1953, at an approximate cost of $2000. The amount does not include the cost of raising the wind bracing on the undamaged portion of the span.

The prompt attention given to this damage by Keith and his men may have prevented total loss of this span with a corresponding inconvenience to the traveling public by having this busy structure out of service. A.J. Sherrod's prompt assistance in outlining proper sequence and work necessary to restore the span was of great value in expediting the completion of the work with little interference to traffic.



Close-up of damaged column on downstream side of panel 3. Note damaged wind bracing.



Looking east after repairs were made and wind bracing was raised. (Before final painting.)

Looking west, showing portal after increasing vertical clearance.

Close-up of west portal after increasing vertical clearance.

Quiz Answers

Here are the answers to the quiz on page 10. How well did you know the Long and Short of It?

1. The summit of Mount Locke on S. H. 118 climbs to a height of 6,791 feet above sea level near the McDonald Observatory.
2. At the other extreme, the lowest point on a state highway is 76.5 feet below low tide in the new Baytown-La Porte Tunnel on S. H. 146.
3. The Neches River Bridge on S. H. 87 is the highest bridge in the state highway system. Built on flat marsh lands between Port Arthur and Orange, the structure rises to a height of 176.9 feet from water level to the bottom of the bridge.
4. The longest highway is S.H. 6, which begins at Breckenridge and runs for 340 miles, ending near the Galveston Causeway.
5. State Highway 165 is the shortest highway in the system. It is only .9 mile long, and is located in the State Cemetery in Austin.
6. State Highway 183 between Dallas and Fort Worth carries the largest daily volume of traffic in the state system.
7. State Highway 118 between Alpine and Big Bend Park, in Brewster County, the biggest county in the state, carries the smallest daily volume of traffic.
8. U.S. 83, which enters the state in Ochiltree County and runs to Brownsville for a distance of 895 miles, is the longest in the state.
9. The shortest U.S. highway is U.S. 71 which runs for 3.42 miles entirely in Texas and 4.6 miles on the Texas-Arkansas state line.

SEAL COATING

M.B. Hodges, District Engineer
District 22

Shortly after we started our seal coat program for the summer I noted many such sections as that pictured. At first the blame was placed on the limestone rock asphalt aggregate, Grade 3, as it had an abnormal amount of dust even though meeting the specifications.

Subsequent investigations, however, eliminated this and placed the blame on the use of a front end loader for loading the aggregate into the trucks for distribution on the various jobs. The operator of a front end loader cannot possibly see where the blade is, with the result that quite a bit of just plain dirt was picked up during the truck-loading operations. Quite naturally this material was segregated in the truck and went onto the asphalt in the same manner. The asphalt immediately picked up the dirt with the result that the stone had no chance for a bond.

In the construction of the Chaparosa Creek bridge on State 76 about two years ago we had a similar experience in the loading of the aggregates for concrete, and after completion of the structure we noted several "holes" in the floor slabs as a result of getting clay into the concrete.

Now and in the future we have discontinued the use of a front end loader in picking up any kind of aggregates which have been stockpiled on the ground.

Interesting Information About District 21

J.F. Snyder, District Engineer
District 21

A circular letter of the type below was first published in April, 1948, again in 1951, and was recently brought up-to-date for the benefit of the District 21 personnel. From time to time, I have prepared similar releases to our employees in an attempt to keep them interested and informed of general conditions and events.

COMMISSION

E. H. THORNTON, JR., CHAIRMAN
ROBT. J. POTTS
MARSHALL FORMBY

TEXAS HIGHWAY DEPARTMENT

STATE HIGHWAY ENGINEER
D. C. GREER

November 12, 1953
Pharr, Texas

District 21
Interesting Information About District 21

IN REPLY REFER TO FILE NO.

TO ALL DISTRICT PERSONNEL:

County	Area Sq. Mi.	1920	1930	1940	1950	Pop. Density Per Sq. Mile	Farm to Market Hwys.	Total Highway Mileage
Brooks	908	4560	5901	6362	9170	10	34.119	102.389
Cameron	883	35562	77540	83202	124834	141	173.707	334.428
Duval	1814	8251	12191	20565	15824	9	42.3	171.20
Hidalgo	1541	28110	77004	106059	159994	104	192.652	374.617
Jim Hogg	1139	1914	4919	5449	5639	5	87.27	108.05
Kenedy	1407	1033	701	700	629	0.5	-	46.683
Starr	1207	11089	11409	13312	13898	11.5	78.409	125.216
Webb	3295	29152	42128	45916	55904	17	18.939	211.279
Willacy	595	-	10499	13230	20891	35	88.438	130.378
Zapata	1080	2929	2867	3916	4306	4	27.30	83.338
Totals	13869	133700	245159	298711	411089		743.14	1677.987

Population of United States 1950 - - - 150 million plus
Population of Texas 1950 - - - - - - - 7,758,690
Per cent of Texas population living in District 21 - - - 5.3%

Area of United States - - - 3,022,387 sq. mi.
Area of Texas - - - - - - - 267,339 sq. mi.
Per cent of Texas area within District 21 - - - - - - - 5.2%
Per cent of U.S. area within District 21 - - - - - - - 0.46% (.46 of 1%)

Improved Highway Mileage in Texas - - - 44,537
Per cent Improved Highway Mileage in District 21 - - - 3.75%
Per cent Highway Mileage in District 21 Designated Farm Roads - - - 44.3%

District 21 is larger in area than New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New Jersey, Delaware, Maryland, or the District of Columbia. It is as large as the District of Columbia, Delaware, Connecticut, and Massachusetts put together.

It is as far from Boca Chica to the Dimmit County Line as it is from Abilene to Tyler.

Yours very truly,

J.F. Snyder
District Engineer

JFS:pb

REGULAR MAINTENANCE EXPEND

COSTS BY

PERCE

REGULAR MAINTENANCE EXPE

Costs by

Perc

DISTRICT	1	2	3	4	5	6	7	8	9	10	11	12
Bs. & Surf.	40.5	30.2	31.0	32.9	33.1	35.0	29.7	32.3	33.9	38.0	26.1	23
Sh. & Sd. Appr.	11.3	11.2	19.9	10.1	12.2	14.1	12.7	16.1	11.4	16.1	16.9	10
Rdsd. & Dr.	6.4	4.4	2.6	5.4	11.9	1.7	1.9	3.4	5.3	5.8	4.1	4
Str. Under 20'	2.9	1.1	0.6	2.0	1.6	0.7	0.4	0.3	2.5	2.5	1.8	1
Bridges	0.7	1.8	2.3	0.5	0.1	0.1	1.1	0.6	1.0	1.8	1.6	1
Gen. Maint. (Tot.)	61.8	48.8	56.3	50.8	58.8	51.6	45.8	52.7	54.1	64.2	50.6	55
Asst. to Traffic	0.4	0.1	0.1	0.1	0.3	0.1	0.3	0.6	0.3	0.1	0.1	0
Mkrs. & Signs	7.5	9.4	6.4	6.4	8.8	8.7	5.4	11.4	9.0	4.3	7.0	9
Guide Mkrs.	4.3	8.4	12.9	5.5	4.4	7.7	9.2	7.0	6.5	3.9	5.2	3
Pks. & Plants	0.6	1.4	0.9	1.4	2.6	2.3	2.5	0.7	0.5	0.7	0.8	0
ROW Maint.	12.1	14.4	6.2	12.2	9.0	7.6	13.0	7.5	11.2	13.8	18.0	13
Emergency	0.1	0.2	0.1	0.1	0	0.1	0.9	0.9	1.6	0.2	2.1	0
Snow, Ice & Sand	0.8	0.7	0.3	7.7	1.4	1.0	0.4	0.3	0.4	0.3	0.1	0
Traffic Serv. (Tot.)	25.8	34.7	27.0	33.2	26.5	27.5	31.6	28.4	29.5	23.3	33.2	27
Undist.	12.4	16.6	16.7	16.0	14.7	20.9	22.6	18.8	16.4	12.5	16.2	16
Tot. Expend. ($1 Thousand)	1249	991	809	1177	1202	837	700	1062	1031	1310	963	1541

TURES FISCAL YEAR 1952 - 53

PERATIONS

TAGE

RES FISCAL YEAR 1952-53

ations

e

13	14	15	16	17	18	19	20	21	22	23	24	25	Average
42.1	28.9	27.4	39.1	42.5	35.3	25.3	24.0	31.7	24.9	30.9	19.2	18.6	31.6
16.6	6.7	10.0	10.3	14.5	13.7	13.2	14.5	14.5	11.9	15.6	15.2	17.9	13.2
1.9	3.8	3.9	2.7	2.2	5.7	8.0	4.8	2.3	1.8	5.2	6.2	8.5	4.7
0.5	1.3	0.5	1.0	2.5	0.9	1.2	1.9	0.6	0.8	1.9	2.2	1.9	1.4
2.5	0.4	0.4	3.2	0.8	0.8	1.3	5.3	0.7	0.3	0.4	0.6	0.6	2.2
53.5	41.2	42.1	56.3	62.4	56.3	49.0	50.5	49.8	39.7	53.9	43.4	47.4	53.1
0.2	0.7	1.0	0.6	0.1	1.0	0.2	0.1	0.1	0.6	0.1	0.2	0.2	0.3
6.2	7.1	9.3	8.4	4.0	6.4	7.5	6.7	6.6	6.7	6.7	8.4	7.4	7.4
4.8	6.5	10.3	2.9	5.9	5.3	5.7	5.2	3.8	6.3	5.7	8.1	7.4	6.0
0.5	1.4	1.4	0.7	0.4	0.5	0.8	0.5	2.1	1.8	0.9	3.2	0.9	1.1
10.1	12.7	12.3	11.2	8.9	14.9	21.7	14.0	18.2	15.4	12.5	14.1	11.3	12.6
0.1	11.4	3.0	2.8	1.1	0.1	0.9	3.8	0.5	0.1	0.9	1.0	1.7	1.3
0.1	0.4	0.2	0.1	0.3	0.8	0.3	0	0.5	0.1	0.2	0.2	1.6	0.8
31.9	40.2	37.5	26.7	19.7	29.0	37.0	30.4	31.9	31.0	26.9	35.3	30.5	29.6
14.5	18.6	20.4	17.0	17.9	14.7	14.0	19.1	18.3	29.3	19.2	21.3	22.1	17.3
	989	1194	1041	942	1346	938	1137	825	612	708	603	616	24836

False Work for The FS-8

W.B. Stovall, Chief Inspector
District 20

The Texas Highway Commission awarded a contract to Campbell and Kay, Tyler, Texas, on December 3, 1951, for the construction of an eleven-span (FS-8-22-25 design) concrete slab bridge on Highway 105-T, Liberty County, over Neville's Bayou. This contract was completed on July 25, 1952.

In the construction of this bridge the "bar-joist" type of false work was used. The contractor submitted a plan for supporting the bar-joist which proved very efficient and economical.

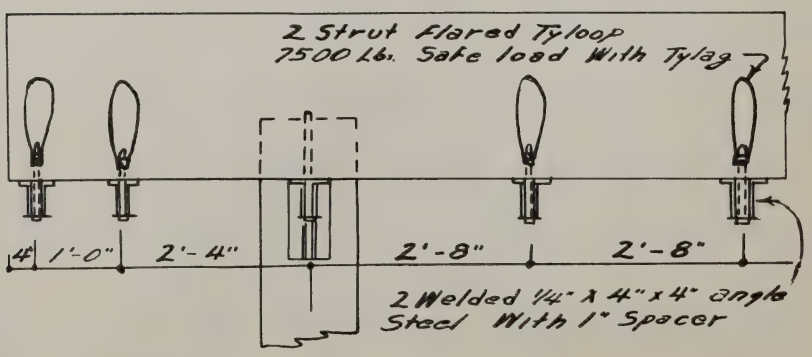
The accompanying sketches show the plan in detail.

As can be seen, the use of wooden wedges for grading the deck has been eliminated. By cutting the top 6-by-8-inch support timber to the camber of the deck, it is possible to set the deck to grade by use of the jacks.

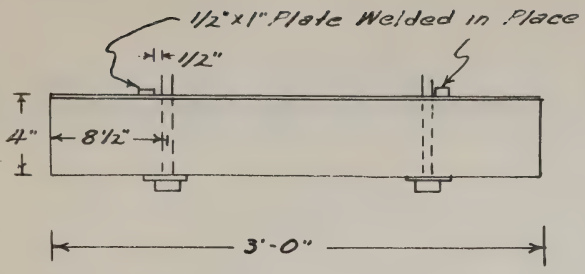
The one-half-by-one-inch plate welded in place on top of the angle steel supports serves to hold the support away from the concrete, thus preventing any irregularity in the concrete from causing a lever action upon the "tylag."

The tyhangers, tyloops, and tylags are patented devices, and are sold commercially.

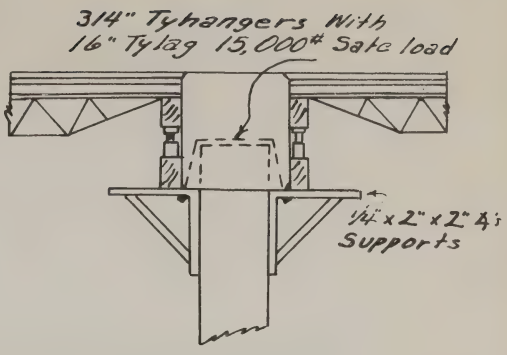
SKETCH SHOWING METHOD USED FOR SUPPORTING FORM WORK ON NEVILLE'S BAYOU BRIDGE STATE HWY. 105-T LIBERTY COUNTY



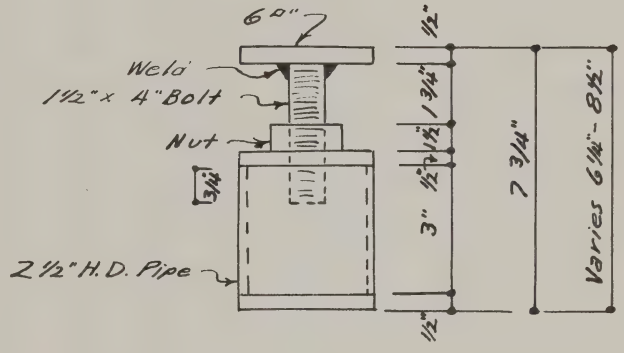
CAP DETAIL



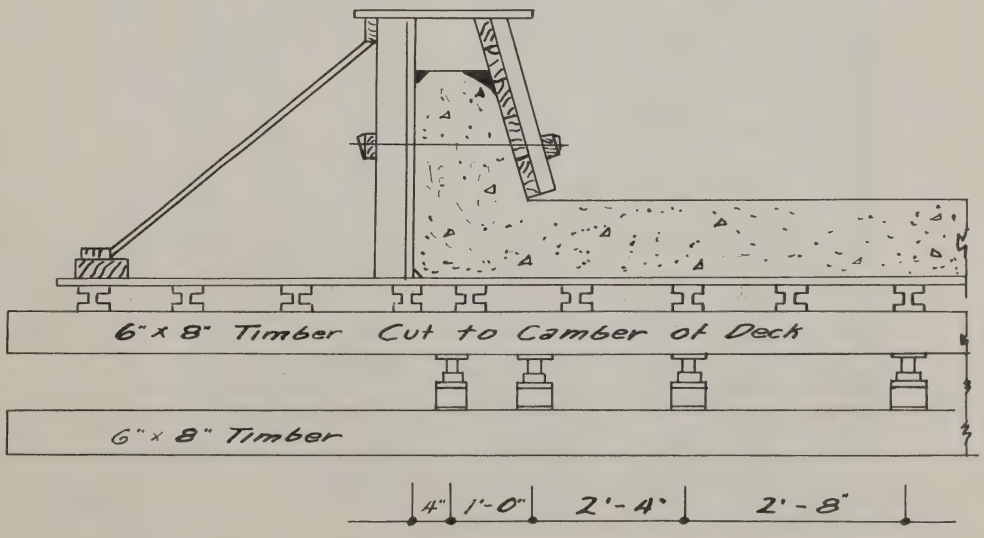
SUPPORT DETAIL



OVER PILE DETAIL



JACK DETAIL



DETAIL SHOWING LOCATION OF JACK'S

CUMULATIVE TOTAL OF CENTER STRIPE

AS OF DECE

DISTRICT NUMBER	PAINT STRIPE	ASPHALT STRIPE	TOTAL COST	GALLONS OF PAINT USED PER MILE	PAINT STRIPE TOTAL MILEAGE
1	332.13	2,289.04	2,621.17	20.00	2.50
2	2,521.46	3,127.49	5,648.95	20.93	24.93
3	4,392.24	2,466.08	6,858.32	24.17	30.73
4	2,601.35	14,957.90	17,559.25	15.77	30.81
5	2,363.41	16,937.31	19,300.72	19.74	31.40
6	6,631.84	2,764.54	9,396.38	11.33	65.37
7	6,155.00	20,038.00	26,193.00	20.30	55.16
8	7,262.09	12,359.31	19,621.40	14.40	92.47
9	6,843.08	7,981.88	14,824.96	15.52	83.11
10	4,711.88	2,844.02	7,555.90	15.73	64.54
11	4,997.18	2,229.28	7,226.46	17.93	72.76
12	6,642.51	658.17	7,300.68	13.55	75.34
13	6,839.99	1,948.48	8,788.47	25.89	56.62
14	12,155.93	5,231.19	17,387.12	18.40	133.74
15	3,868.60	9,500.00	13,368.60	12.80	32.90
16	1,233.48	4,482.52	5,716.00	13.60	16.00
17	6,276.72	4,256.24	10,532.96	15.00	63.00
18	9,327.73	3,872.34	13,200.07	14.29	141.04
19	3,760.96	10,412.20	14,173.16	19.50	33.19
20	1,249.88	8,486.04	9,735.92	19.20	18.75
21	1,768.91	8,861.37	10,630.28	20.00	10.55
22	4,498.87	8,065.28	12,564.15	16.29	50.03
23	6,088.63	7,992.16	14,080.79	16.38	80.60
24	7,444.04	4,371.23	11,815.27	14.50	88.27
25	1,389.54	1,947.80	3,337.34	20.20	10.40
	121,357.45	168,079.87	289,437.32		1,364.21

Salary and Labor	199,511.63
Equipment Rental	36,691.03
Material Used	133,234.66
	289,437.32

WORK PERFORMED BY DISTRICT

MBER 31, 1953

ASPHALT STRIPE TOTAL MILEAGE	TOTAL MILEAGE	PAINT STRIPE AVERAGE COST PER MILE	ASPHALT STRIPE AVERAGE COST PER MILE
51.40	53.90	132.85	44.53
87.53	112.46	101.14	35.73
10.75	41.48	142.93	229.40
271.09	301.90	84.40	55.18
290.30	321.70	75.26	58.34
35.00	100.37	115.07	78.99
332.03	387.19	112.00	60.00
211.34	303.81	78.53	58.48
164.52	247.63	82.34	48.52
46.74	111.28	73.00	60.84
41.40	114.16	68.67	53.38
	75.34	88.16	
53.78	110.40	120.79	36.23
135.22	268.96	90.89	38.68
129.32	162.22	117.59	73.46
73.00	89.00	77.09	61.40
115.00	178.00	99.63	37.01
91.14	232.18	66.13	42.48
169.00	202.19	113.32	61.61
85.70	104.45	66.66	99.02
181.20	191.75	167.67	48.90
148.30	198.33	89.90	54.38
151.90	232.50	75.54	52.61
81.59	169.86	84.33	53.58
40.00	50.40	133.61	48.69
2,997.25	4,361.46	88.96	56.08

No work performed in Districts 2 and 4.
District 3 did not submit a report for December.

HIGHWAY IN THE NEWS

TOUCH OF SENTIMENTALITY

HERE IS AN interesting highlight we ran into the other day, and it has to do with car tags.

Jim Douglas, Houston district highway engineer, is one of the foremost highway construction men in the country. In his 32½ years with the Texas Highway department, he has probably built more miles of roads than any other Texan.

His eminence as an engineer is known wherever highway building is the topic of conversation.

But "Mr. Jim" is human. He can never remember the license number of his personal car.

So in 1948 one of the head accountants in the Houston district office decided he would help his boss.

He went to Carl Smith and enlisted Smith's aid. They got license number JD-1948 for the Douglas car. The next year they got JD-1949 and so on.

But in 1952, the JD licenses had been assigned to another county so when time came for the Douglas license plate to be secured, there was no JD available.

So they got MD-1952, and the MD stood for Marie Douglas, Mr. Douglas' wife.

During the year Mrs. Douglas died suddenly, so this year when car tag time came, they got MD-1953 in memory of Mrs. Douglas.

Although Mrs. Douglas always remained in the background and let her husband take all of the bows in the highway construction world, she made many trips with him and was well known to hundreds of highway people.

This little touch of sentimentality, we think, is most appropriate. We never had the chance to know Mrs. Douglas personally, but from what we have learned about her in recent months, she must have been a wonderful person.

There's just something about this story that is heart-warming. You'd think so too if you knew Jim Douglas.

He's one of the finest men in public life in Texas—or anywhere else. If there were more public servants like him on our payrolls, this sure would be a better world.

—o—

THE MAINTENANCE MEN

During the holiday season we give praise to our friends and neighbors. So now in keeping with the spirit of the season would be a time to say something about the maintenance men of the Texas Highway department here in Floyd county. This part of the highway work is in good hands.

The maintenance men are the keepers of our good roads. When the bid is given to a contractor and the project is completed it then becomes their responsibility. They sign and make needed repair from time to time.

In case of snow or high water you find these men on the job day and night working tirelessly and willingly keeping the wheels of the traveling motorist rolling.. They have gained and are holding the respect of the people they come in contact with.

They are not the kind of men to solicit public acclaim. They let the job they do "stand on its own bottom." Fellows like these are bound to keep good roads.

—o—

People and Things

ALMA YATES HART

Did you ever travel a road that was all sunshine? That sounds intriguing perhaps, if you didn't need a restful shade. But if it is July or August of a hot summer when the metal of your auto burns your flesh on touch, tree-shaded roadside parks, arbor shades or even just tree with a shade which the weary, hot traveler can reach becomes a welcome sight, and then, if it is absent, it may become a real need.

We wish to commend the Texas Highway Department for its foresight in providing these wonderful recreational features beside our highways. Like the old saying, "We never miss the water until the well runs dry," we did not sufficently appreciate the Texas parks until we went where they are conspicious because of their absence. Especially is the need great through the desert section of New Mexico, Arizona and California. Perhaps nature has decreed that there be no parks in these regions, but we were aroused to wonder if some shade could be made available to tired, heat-suffering travelers in at least a few places. Even when a tree large enough to furnish shade grew near the road, it would be over a ravine or similar rough spot which did not permit its use as a place where a traveler could roll his car under to reduce its metals burn and cool its motor, to say nothing about the suffering travelers.

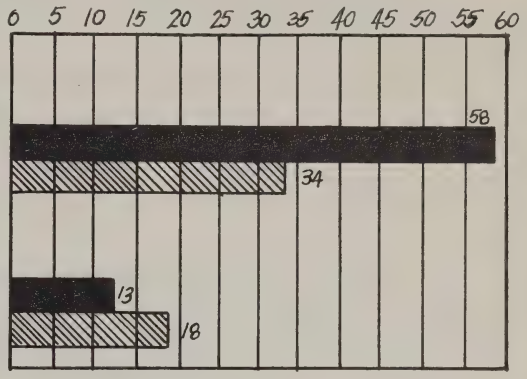
Of course, if a state wishes to advertise "The Desert" as an attraction, shade would be taboo. Personally, we didn't find "The Desert" an attraction. We endured its grind, grime, and grim heat as a necessary prelude to where we wanted to go. Although we were "birds of passage" a small amount of labor on the part of the highway department would have added immeasurably to the comfort and pleasure of our passage, and doubtless, to that of hundreds of others passing through..

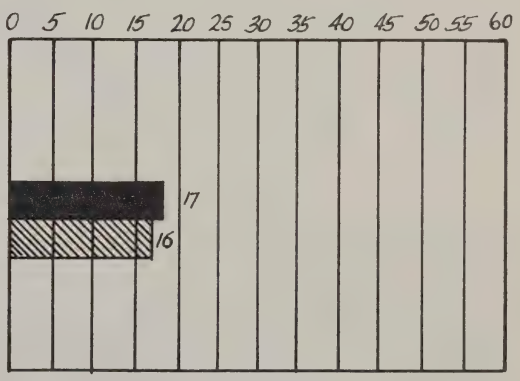
One of the pleasantest parts of a travel vacation, we found, is the mid-morning or mid-afternoon break in Texas at a roadside park where we partake of an ice cold drink, or uncork our thermos of hot water, take our plastic cups and spoons and make a cup of instant coffee, Preem solves the cream problem for us as has the instant coffee solved the making of quick coffee a-la-road-side-park Now if the roadside park is missing, one most important ingredient is gone and the recipe is a failure.

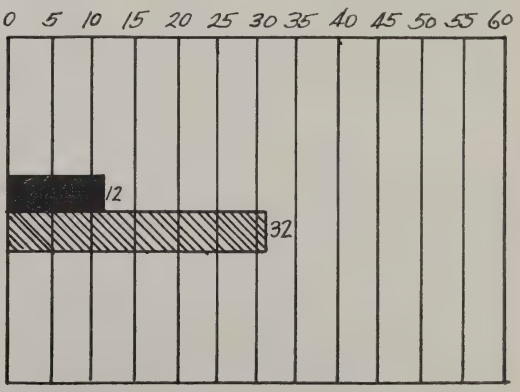
Yes, Texas Highway Department, we salute you.

Usage vs. Expenditures

Comparison of traffic usage and construction expenditures on the Texas Highway System divided into the classes designated.







Per Cent of Total Traffic - 1953

Per Cent of Expenditure for Construction and Betterment - 1953

This, of course, does not present a complete picture, but is a simple application. The balance between urban traffic on highway extensions and urban expenditures is indicated. The unbalanced relation between the rural primary system and F. M. road system is brought out.

Drag Blade Protection

R.N. Jennings, District Maintenance Engineer
District 7

The blades used with our shoulder machines protrude over on the pavement and are in constant danger of being struck by vehicles coming from the rear.

The Maintenance Foreman at San Angelo, W.H. Hopewell, and the District Equipment Supervisor, W. A. Vannoy, conceived of the idea of mounting the black and white cross-barred sign, which is ordinarily used at narrow bridges, in a horizontal position at the rear of the drag-off blade.

The colors of this board contrast with the yellow of the equipment, making the machine very visible under many conditions of light.

The board is adjustable and may be moved to the right or left for protection to the most outward point of the blade.

Semitrailer Broom

E.W. Pile, Senior Maintenance Foreman
District 21

Pictured here is a rotary broom modified to use as a semitrailer on a pickup. This modification consists of removing the front wheel of the broom and bolting on a shop-made hitch. The hitch costs $16 to construct and can be readily removed for replacement of the regular front wheel.

This broom is used in the Hidalgo County Section in District 21 to sweep side-road approaches. There are 157 paved side-road approaches in this section which usually must be swept every 60 days because gravel is carried onto approaches by traffic. Ninety-seven of these approaches are

Semitrailer broom sweeping the intersection on U.S. 83, Hidalgo County.

on U. S. 83, which carries from 5,500 to 14,000 vehicles per day. Due to the traffic volume, it is impractical to turn a broom around, and the semitrailer is necessary to permit the broom to be backed up.

Before the broom was used, these approaches were swept by hand at an average cost of $1.53 for sweeping each approach one time. This amounted to approximately $1,440 a year for these 157 approaches. Average cost of sweeping with the rotary brooms is 51 cents for sweeping each approach one time, or approximately $480 per year for these 157 approaches. This resulted in an annual saving of $960 a year with an investment of only $16, and released maintenance forces that had been used for handsweeping to do other work.

• • •

PERSONNEL CHANGES

H.L. Arno, Director of Personnel

District 1

County Residency, Paris: C.L. Walker changed from Resident Engineer to Senior Resident Engineer January 1, 1954.

Land Service Roads Division, Austin

Robert E. Byers changed from Designing Engineer to Senior Designing Engineer January 1, 1954.

Sign and Barricade Rack

L.K. Willis, Assistant District Engineer
District 7

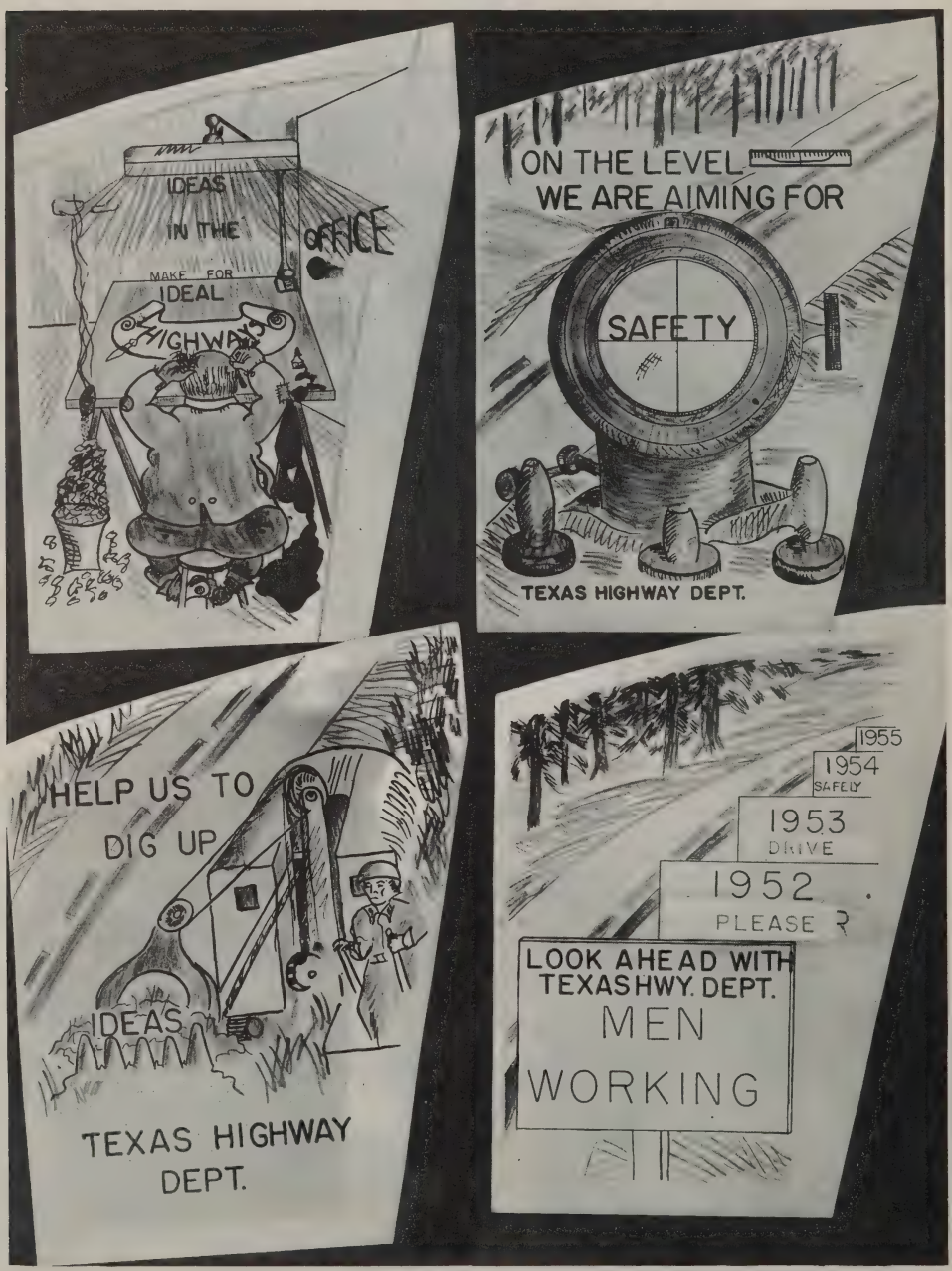
A working sign and barricade rack has been erected in the Junction section under the direction of Maintenance Foreman Hubert Fields.

This rack makes signs and barricades readily available to trucks using them, provides protection from dirt, removes danger of being damaged by equipment, allows number and condition of signs and barricades to be determined easily, and provides a central storage point for these items.

Display Cards

E.D. Parmer, Assistant District Engineer
District 20

While in the office of W. E. Suter, Senior Resident Engineer at Jasper, I noticed the following cards which had been inserted in a frame for display one at the time. Mr. Suter informed me that these cards had been prepared by Joe Bailey who worked for the Highway Department in 1951 and 1952 as a rodman.



Along the Way

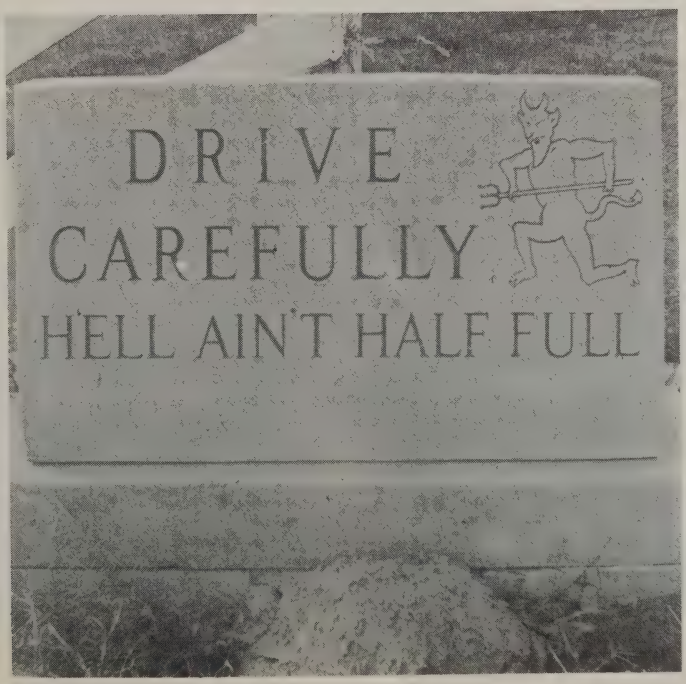
Always noted for their pungent language and picturesque speech, Texans make up fancy brands for their cattle, tell tall tales, and decorate the landscape with terse signs.

Often saying more in a few words than can be put in a paragraph, these signs dot the landscape all over Texas, cheering up many motorists on long stretches of highway.

This particular sign was brought to our attention by M.G. Cornelius, District Engineer at Yoakum. The photograph was taken by W.A. King, Senior Resident Engineer at Victoria.

The stone monument stands at the entrance to the Jack Angerstein ranch on U.S. 59, five miles west of Victoria.

"Texas Highways" will welcome photographs of unusual signs in other districts.



Service Club Signs

Submitted by W.E. Simmons, District Engineer, District 20
Suggested by F.M. Davis, District Engineer, District 15

In this district, we are bombarded constantly by requests from service clubs for permission to erect their signs on the right of way. We are holding to the policy not to allow any new signs to be placed on state property, but they are being erected up and down the highways on the right-of-way line, and they do create a clutter, as you well know. The grouping of these signs, which was developed as a project by the Beaumont service clubs, is a neat, effective presentation of needed information, and eliminates small, easily overlooked signs scattered along the road.

We would suggest that this method of erecting service club signs be recommended to clubs by districts which are interested in keeping their right of way and adjacent area clear of superfluous signs.

ACCIDENTS REPORTED FOR DECEMBER

Equipment and Procurement Division

Total amount of damage is from September 1, 1953, up to date and is to both State-owned equipment and that owned by individuals involved in accidents.

District 1	2 Accidents	$ 856.00
District 2	1 Accident	747.00
District 3	3 Accidents	1,410.00
District 4	2 Accidents	345.00
District 5	3 Accidents	455.00
District 6	--	--
District 7	3 Accidents	360.00
District 8	3 Accidents	300.00
District 9	--	--
District 10	2 Accidents	103.13
District 11	1 Accident	250.00
District 12	8 Accidents	2,520.00
District 13	4 Accidents	1,121.93
District 14	3 Accidents	400.00
District 15	1 Accident	60.00
District 16	1 Accident	--
District 17	2 Accidents	150.00
District 18	8 Accidents	397.00
District 19	--	--
District 20	3 Accidents	1,231.00
District 21	6 Accidents	1,700.50
District 22	2 Accidents	800.00
District 23	--	--
District 24	1 Accident	110.00
District 25	3 Accidents	166.00
Camp Hubbard	--	--

ROADSIDE PARK ARBORS
In District 4

J.M. Harris, Maintenance Engineer
District 4

Due to the increased need for roadside parks in District 4, where there are very few native shade trees, it has been our policy to erect arbors for shade and to cover tables and benches.

In the summer of 1953 we erected several arbors using corrugated asbestos siding for roofing, placed on a steel framework. Frame and roof were fabricated in the District Shop, and transported to the site assembled in half sections. Brick piers were used, built with salvaged paving brick. Roof sections were bolted together and bolted to piers. The average cost of the six arbors built was $404.

U.S. 66, Oldham County. Arbors and fireplace units placed at existing table units.

U.S. 54, east of Dalhart, Dallam County.

U.S. 54, three miles east of Stratford in Sherman County.

. . . We were impressed with your highways!! Best on earth. Wish you would teach the rest of the country how to build them. I like your climate and space.

Aramco Dhahran
Saudi Arabia

After painting the table top in the roadside park located on U.S. 54, Hartley County, southwest of Dalhart, a sign was left attached warning of fresh paint. On returning a few hours later, employees found the comments below written on the "Fresh Paint" sign.

Wonderful!! - This is the only fresh thing we have seen in Texas so far.
Michigan

Wonderful place. Reminds me of Michigan. Give Texas credit, nicest spot this side of Los Angeles. Should be named Paradise Park.
A tourist from Michigan.

Must add our bit. Really enjoyed it in Paradise Park. Why didn't someone think of it sooner.

Tourists from Cody, Wyoming

. . . I hereby respectfully submit a suggestion to your department regarding road repairs. I suggest that you put up a sign indicating "Wet Tar" wherever there is a long stretch of road with wet tar as the same is not perceptible in all instances to the driver of the vehicle. I have had two unpleasant experiences during the past year, getting tar all over my car before realizing it was wet tar.

Leon D. Glasscock
San Antonio, Texas

SIGNS OF THE TIMES . . . As noted by travelers over Texas Highways.

. . . The highway markers impressed us! Never lost my way in cities. Best and most comprehensive on entire trip from Washington to Florida and return.

Olympia, Washington

. . . Could use more signs for historical locations and points of interest.

Floyd, Virginia

. . . Need signs informing travelers that there is a bypass around Dallas.

Roanoke, Virginia

. . . Highways marked perfectly!

Memphis, Tennessee

. . . My car broke down between Waskom and Marshall, and I would have had considerable trouble and delay in getting it running again but for the help of two of your maintenance men. One was Jesse Pruitt, and the other was Hamp Mason, I believe.

My water hose from the radiator broke loose, and drowned out my engine, and with their very fine cooperation I was able to get back on my travel.

I offered to compensate both of them, but they refused any offer of money, stating simply that it was their duty to help motorists.

Since that attitude is so unusual in this day and time, I wanted to write to commend these two men, and compliment you on your exceedingly fine organization.

Samuel Abramson
Shreveport, Louisiana

. . . A big "bouquet" to your system of roadside parks which I have used many times in traveling across Texas. A commendation for their convenience and neatness!

Robert A. Houser
Manhattan Beach, California